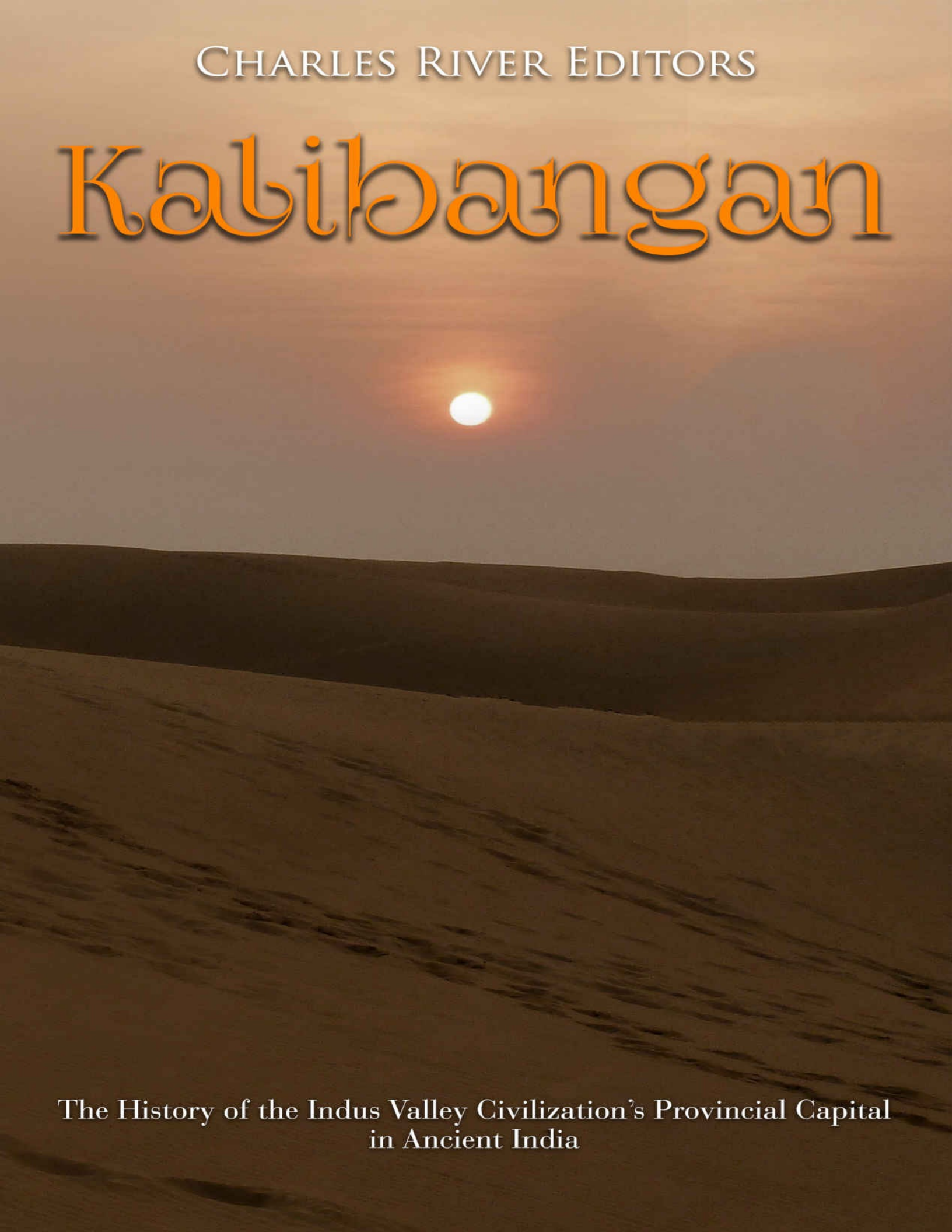
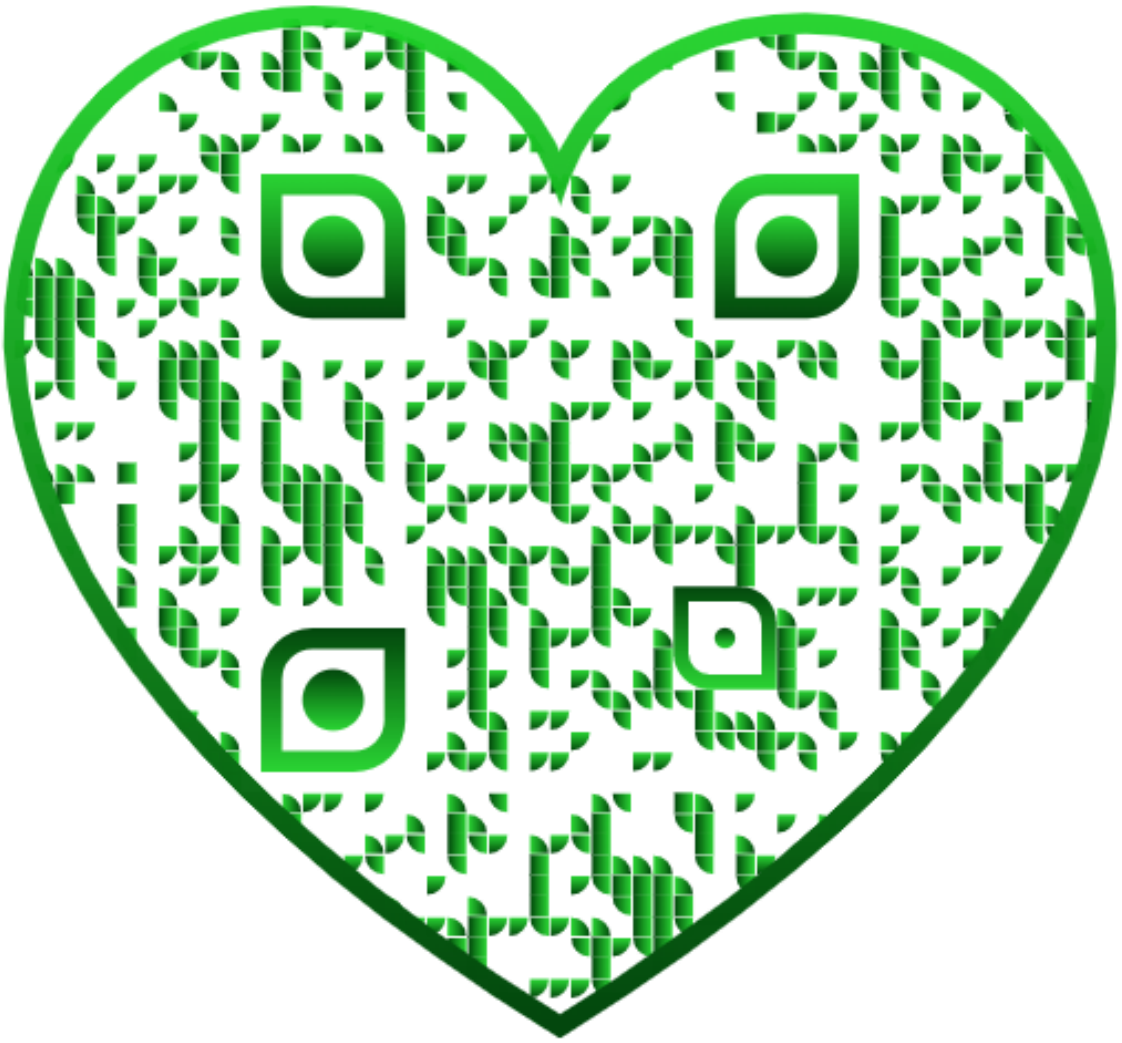

Charles River Editors
Kalibangan
The History of the Indus Valley Civilization's Provincial Capital in Ancient India



Kalibangan: The History of the Indus Valley Civilization's Provincial Capital in Ancient India

By Charles River Editors

The Citadel in Kalibangan

Introduction

The ruins of a brick wall in Kalibangan

Kalibangan

"Well-regulated streets (were) oriented almost invariably along with the cardinal directions, thus forming a grid-iron pattern. (At Kalibangan) even the widths of these streets were in a set ratio, i.e. if the narrowest lane was one unit in width, the other streets were twice, thrice and so on…Such a town-planning was unknown in contemporary West Asia." – B.B. Lal

When one thinks of the world's first cities, Sumer, Memphis, and Babylon are some of the first to come to mind. If the focus then shifts to India, then Harappa and Mohenjo-Daro will undoubtedly come up, but after that, India's other ancient cities are often overlooked. This is unfortunate since India's oldest civilization, known as the Indus Valley Civilization or the Harappan Civilization, was contemporary with ancient Mesopotamia and ancient Egypt and had extensive contacts with the former, which makes it one of the most important early world civilizations. Spread out along the rivers of the Indus River Valley, hundreds of settlements began forming around 3300 BCE, eventually coalescing into a society that had all of the hallmarks of a

true civilization, including writing, well-developed cities, a complex social structure and long-distance trade.

Among the many cities that formed in this region was a site known today as Kalibangan, which was unknown to the modern world until archaeologists began uncovering its secrets in excavations during the 1960s. They uncovered a city that was not as large or important as the better-known sites of Mohenjo-Daro and Harappa, but one that was still relatively large and the most important of all Indus cities along the now extinct Saraswati River. Excavations at Kalibangan have revealed that the city had two phases of settlement which corresponded with the two major phases of Indus Valley Civilization, and that it influenced the smaller settlements along the Saraswati River. Archaeological work at Kalibangan has also shown that although it followed some of the patterns of larger Indus cities such as Mohenjo-Daro and Harappa, it was also a unique city in many ways. Kalibangan was located on a different river from the other major Indus Valley Civilization cities, and its river suffered a fate that led to the end of the city. The city of Kalibangan also presented modern archaeologists with a treasure trove of findings because it was one of the best preserved Harappan sites, giving scholars a chance to see not only how the people of Kalibangan lived, but possibly how the city died.

Once Kalibangan became depopulated after 1500 BCE for reasons that are still uncertain, its memory, or at least the memory of the Saraswati region, lived on in the epic poems of the Aryans known as the *Rig Veda*. Although the *Rig Veda* is a religious-mythological text, it can help provide some clues as to the fate of Kalibangan, including whether the Aryans were connected to the city.

Kalibangan: The History of the Indus Valley Civilization's Provincial Capital in Ancient India examines the region, the civilization that built it, and what life was like there thousands of years ago. Along with pictures and a bibliography, you will learn about Kalibangan like never before.

Kalibangan: The History of the Indus Valley Civilization's Provincial Capital in Ancient India
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An Overview of the Indus Valley Civilization

In 1856, a team of British railway engineers was overseeing the construction of a railway line connecting the cities of Lahore and Multan, in what was then northern India when they unearthed a huge cache of uniform, fire-baked bricks. In flat, dry terrain, where sourcing construction materials, in particular ballast, was very difficult, this discovery saved an enormous amount of time and money. Today, just under 100 miles of track between Lahore and Karachi is laid on a bed of 4,000-year old kiln-fired bricks.

At the time, no questions were asked, and the bricks were simply quarried and used along miles of the track in either direction. As the railway edged toward the Arabian Sea, few more similar caches were unearthed, and again the bricks were simply dug up and crushed. Eventually, however, it began to dawn on some of the railway engineers that what they were dealing with was something more than simply rubble. Thus, the quarrying of the sites was halted and they were marked for future reference, but otherwise left alone.

It was not until the 1920s that the first planned excavation of a few selected sites began, under the direction of Indian archaeologist Daya Ram Sahni. What emerged as the various ruins were examined was the remains of a network of villages, towns and cities representing an entire civilization which was, until then, almost entirely unknown. The largest site unearthed was Harappa, the second to be disturbed by railway construction, and the first to be comprehensively excavated. This led to the naming of the civilization the Harappan Civilization, although it is now best known as the Indus Valley Civilization.

The site of the ancient city of Harappa lies about 100 miles southwest of the modern Pakistani city of Lahore, capital of the Punjab Province. Initially, architects assumed that they were dealing with sites related to the Maurya Empire, a significant empire in ancient India that thrived between 322 BCE and 185 BCE, but soon enough it became clear that this was something much older. The archaeological discoveries around the Indus Valley Civilization revealed a Bronze Age civilization dating back to at least 3300 BCE. It had endured for perhaps 2,000 years, until about 1300 BCE. Evidence of pre-Indus Valley Civilization settlements dating back to 7000 BCE have been unearthed in Baluchistan in western Pakistan. At its peak, the known parameters of the Indus Valley Civilization covered the Indian states of Gujarat, Haryana, Punjab, Rajasthan and Jammu and Kashmir, and the Pakistani provinces of Sindh, Punjab, and Baluchistan, overlapping into parts of

Afghanistan.

Before we consider the Indus Valley Civilization sites specific to Gujarat, let's briefly review the history of the society. The Indus Valley Civilization covered an area of about 467,183 square miles. The two major sites of Mohnejo-Daro and Harappa are located in modern Pakistan, and this appears to have been the administrative center of the Indus Valley Civilization.

Com Rogues' picture of part of Mohnejo-Daro's ruins

A picture of ruins at Mohenjo-daro

Mohenjo-daro is an enigmatic settlement, which confuses simple definitions of what a city consists of. It has revealed little evidence of palaces, contains few definite religious buildings, and appears to have never been involved in any external or internal military conflict. The inhabitants' writing has not been deciphered, and little is known about their religious and post-mortuary beliefs. Nonetheless, the city's importance is epitomized by its monumental buildings and walls, enormous manmade platforms, innovative architectural techniques, and evidence that they engaged in trade over vast distances, with high-quality artifacts sent from the Indus Valley as far as Mesopotamia and even Africa. Of particular note was the ingenious drainage system, one of the earliest means by which sewage was drained out of the city. No other urban site of similar size had a hydraulic network as complex and effective as that of Mohenjo-daro, and it would only be surpassed thousands of years later by the network of aqueducts in Rome during the 3rd century CE.

For centuries this city was believed to have sprung into existence suddenly and without precedent, with a highly standardized system of urban development, art, and architecture that is emulated in contemporary settlements across the Indus River Valley in a phenomenon known as the "Pan-Indus system." Although this view has changed over the last few decades, there exists no definitive hypothesis as to how they grew such a complex urban society so quickly. Fittingly, the city has an equally

intriguing and mysterious narrative that explains its decline and eventual disappearance, a tale that gives the site its name: the “Hill of the Dead.”

Three phases have been identified: the “Early Harappan Phase” from 3300-2600 BCE; the “Mature Harappan Phase” from 2600-1900 BCE, and the “Late Harappan Phase” from 1900-1300 BCE. According to some estimates, the population living under the Indus Valley Civilization could have peaked at as many as 5 million.

The Indus Valley Civilization was a river society. As with other great river civilizations, such as those in ancient Egypt and Mesopotamia, the wealth of the society lay primarily in agriculture. Key to survival was the ability to harness the seasonal inundation, both for irrigation and transport, but also for an annual deposit of fresh alluvial soils. Trade was also a significant pillar of the Indus Valley economy, and trade networks were extensive, stretching as far afield as Central Asia, Mesopotamia, the Arabian Peninsula and the Persian Gulf.

The Indus Valley Civilization developed one of the earliest known written languages, standardized across its entire geographic scope. The Indus script, also known as the Harappan script, is dated to the Mature Harappan Period that existed between 3500 BCE and 1900 BCE. Known examples of Indus script take the form of symbols, or hieroglyphs, which are uniformly short in length. In the absence of any bilingual versions, the Indus script remains one of the very few undeciphered forms of ancient writing. As a result, what is known about the Indus Valley Civilization is drawn from extant written texts, as well as archaeology and educated guesses. As with all of the major Harappan sites, the name the ancient Harappans gave to Kalibangan remains a mystery. The name “Kalibangan” is derived from a nearby settlement, and the city is also sometimes referred to as “Kal Vangu” or “Philibangan” (Possehl 2002, 74).

What the archaeological evidence does reveal is that the various civic establishments and municipalities that make up the urban structure of the Indus Valley were highly organized and regulated. Most displayed common, standardized, and recognizable features. This implies a strong centralization, a uniform system of construction, and a regime of code enforcement. A style of urban and rural separation is suggested by evidence of a rural economy centered on agriculture and livestock and an urban economy focusing on manufacturing, arts and crafts. Trade, of course, was an outlet for Indus crafts, and indeed, artefacts of Indus manufacture have been found in widely dispersed locations.

Urban life appears to have been extremely sophisticated for the period, with evidence of indoor plumbing, systems of human waste removal and bathing facilities, which historians frequently remark were superior in many cases to those

found in modern Indian homes. Public baths and public toilets were present in the cities of the Indus Valley long before they appeared in Rome, all of which, notwithstanding the extraordinary social achievement, hints also at a preoccupation with cleanliness and purity.

This, in turn, has led to much speculation on the spiritual and religious practices of the Indus Valley Civilization, leading religious scholars to speculate that some of the earliest elements of Hinduism found their expression here during this period. Purity and cleanliness of body play a central role in modern Hinduism, as does ritual bathing. As a consequence, archaeologists and historians have speculated that the elegant and sophisticated bathing and ablution facilities in many Indus Valley sites are a reflection of an early version of Hinduism.

The various Indus Valley sites have also uncovered countless objects and artefacts to further intrigue and perplex archaeologists. Some of the most interesting of these are hundreds of tiny soapstone seals used to inscribe symbols and designs in soft clay. They have been identified as most likely pertaining to trade, and to methods of marking property. Similar seals have been unearthed as far afield as Mesopotamia, all displaying an identical array of symbols, which tends to confirm the existence of a sophisticated trade relationship between the two societies.

While the use of the seals is easy to infer, and trade is the most reasonable inference, the significance of the various symbols is much less clear. The vast majority of the seals portray male animals with prominent horns and well-defined flanks. Some are recognizable while others are clearly mythic. In general, it appears that any male artistic portrayal takes the form of an animal, while the representation of the female form is almost always literal, but exaggerated. Comparisons have been drawn between these and the ancient Venus representations originating from Europe, which implies an interest in reproduction, potency, and fertility. The most common image represented on the seals is a “unihorned” bull, which, along with highly sexualized portrayals of women, all tend to support this. There can be no doubt, therefore, that sexuality and fertility were central to the culture and religion.

Another striking feature of the urban society, often remarked upon by historians, was the highly sophisticated urban design and architecture. This, as mentioned already, included public baths and toilets, but also many other features of an advanced urban society, replicated only much later in other notable urban societies. This quality of urban planning and architecture implies strong and efficient municipal government, which in turn speaks of strong and clearly defined central government.

Granaries, harbors and docks, sophisticated river transit, and communications with

the coast, alongside flood control and levies, are all features of some of the sites, indicating a highly developed and sophisticated civilization. What is not evident, however, is monumental construction, which was the case in Egypt, and there certainly appears to be no evidence of palaces or temples.

All of this leads to the question of how the Indus Valley Civilization was organized, administered and ruled. Nothing in the archaeological record offers any definitive answer, other than perhaps the fact that strong, centralized authority certainly did exist. This can be determined from the uniformity of civic structure, with details as diverse as civic planning and the size of standard construction bricks. There are intriguing clues, however, such as the apparent uniformity of wealth distribution, which historians have speculated suggests an egalitarian society without hereditary and absolute leadership.

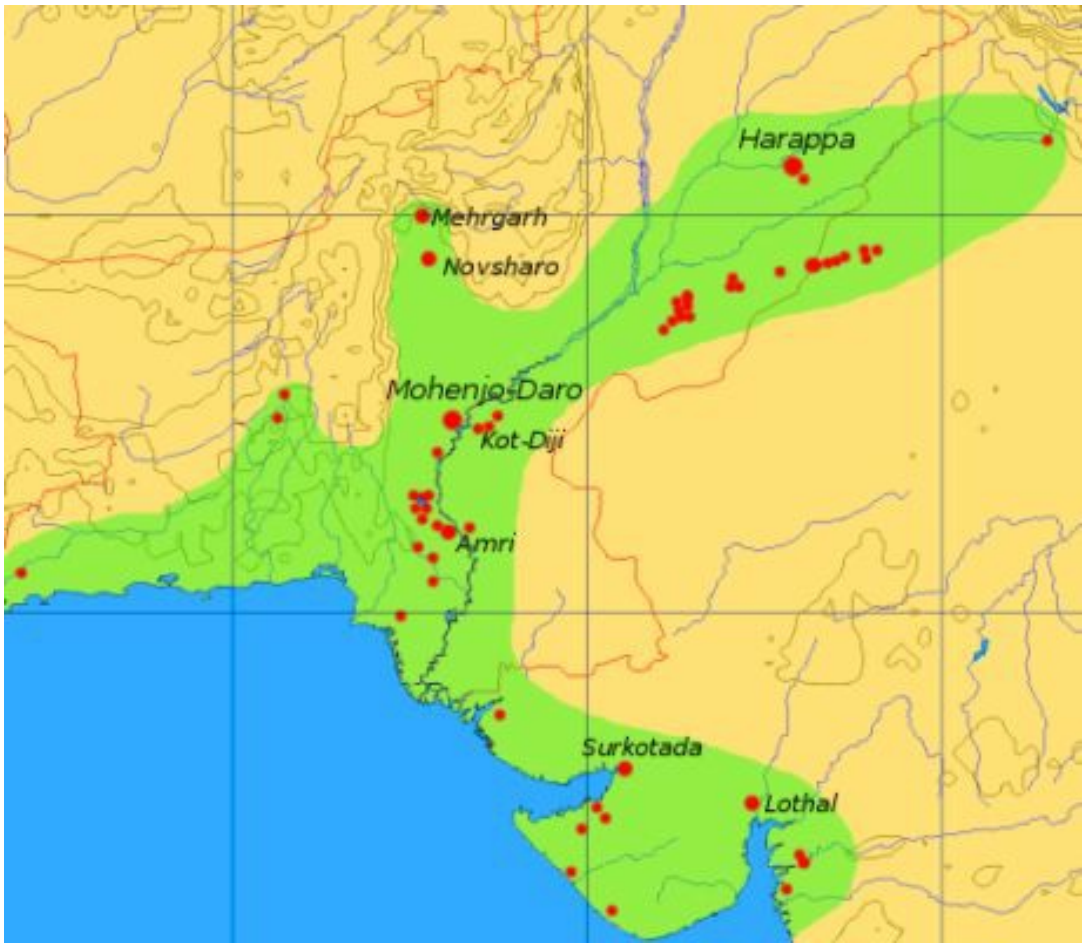
This is most evident in death and burial. There is an indication of established burial practice that feature numerous ordinary interments, but no lavish or ostentatious sites or memorials to great kings and priests. This does not prove or even suggest that the society was without powerful rulers, for it is quite possible that noble burial rites were different, with cremation as a possibility. Still, the lack of visible memorials to powerful men and great rulers is certainly unusual for the ancient world.

There is also no specific reference to war, from which one might surmise that the society was peaceful, or perhaps simply that it was politically united and thus not at war with itself. It is also true that without powerful outside forces to interfere with the development of the civilization or challenge it, there was no one to fight and no one to defend against.

All of this paints a picture of a highly accomplished society, and certainly one ahead of its time in many respects. It was a society concerned with reproduction and fertility. The objects of religious veneration were probably certain male animals associated with virility, most notably the bull. Female powers of reproduction are also frequently represented. Evidence of meditation and of purification rites again hint at an early version of Hinduism, and a preoccupation with the balance of life and nature, and of reproduction and renewal. The longevity of the Indus Valley society and evidence of its continuity suggest a degree of entrenched conservatism, and an environment of apparent wealth and plenty.

The Indus Valley Civilization covered a huge region, but its trade practices meant that that coastal communities and ports were particularly important. The Gujarat region of India is defined almost entirely by the Saurashtra region, or the Kathiawar peninsula. It is bordered to the north by Pakistan and the state of Rajasthan, to the

east by Madhya Pradesh and in the south by Maharashtra. During the existence of the Indus Valley Civilization, the region of Gujarat formed the southernmost provinces, and today Gujarat is home to 13 listed Indus Valley sites. Some are quite obscure, but perhaps the most famous are Lothal, Dholavira and Gola Dhoro.



A map of the region

A picture of excavated ruins at Lothal

Of these, Lothal is perhaps the most interesting, simply because it was the principal seaport of the entire Indus Valley Civilization. Its ruins are located about 20 miles southwest of modern Ahmedabad, at the northern end of the Gulf of Khambhat. The site was first discovered in 1954, after the partition of India, in a series of excavations undertaken by the Archaeological Survey of India. To the north of Lothal, at the tip of the Gulf of Kutch, lies another significant port, Surkotada. Somewhat smaller than Lothal, Surkotada is notable for the discovery of horse remains, the only instance of such remains being found. Surkotada was established as a settlement in the later phase of the Indus Valley Civilization, and it was populated for about four centuries without any major breaks or abandonment.

Bernard Gagnon's picture of an excavated well and bathroom at Lothal

Another important site is Dholavira, located on an isolated island, Khadir Bet, on the salt plains of Rann of Kachchh, close to the current border with Pakistan. The

site was unearthed in the 1960s as part of the same Archaeological Survey of India program that discovered Lothal, and numerous other catalogued and numbered sites all along the coast, and in the interior. Dholavira has been in almost continuous excavation since it was first discovered, and some of the unique features of the city are its uniform planning and a series of water reservoirs, all surrounded by heavy fortifications. These, in combination with the location of the settlement on an island in what is now a salt pan, suggest the need for defense.

Lalit Gajjer's picture of ruins at Dholavira

A picture of one of Dholavira's reservoirs

Dholavira was obviously extremely dry, because a total of 16 reservoirs lie in and around the settlement. They offer more evidence of civic planning, but also proof of the high level of engineering expertise necessary to manage water supplies in such a sophisticated way. As mentioned earlier, the usual haul of seals, graves, and inscriptions all indicate that the Gujarati sites of the Indus Valley Civilization were centers of trade, agriculture, and craft. As such, they were probably wealthier and more sophisticated than the settlements in the interior, simply because of their proximity to the coast and the advantages of trade and interaction with other cultures. What this says about Gujarat as a region, even during its earliest history, was that it was the main center for trade and commerce, which remains the character of the region to the present day.

The Indus Valley Civilization began to slip into decline around 1800 BCE, and as with so much else about this civilization, the reasons for this are unclear. In the 20th century, the most persuasive theory speculates that the Indus Valley was overrun by light-skinned, Aryan races originating from central and western Asia who eventually deposed the darker skinned Indus dwellers. More recent scholarship, however, suggests that the Aryan invasion was something less than an invasion, and more of a gradual assimilation. By the time the Aryans began arriving in the region in significant numbers, around 1600 BCE, the Indus Valley Civilization was already in decline. Other theories, perhaps more plausible, suggest climate change and

alterations in the course of the Indus River. Whatever the case, by 1600 BCE, settlements were being abandoned, and the population was tending to migrate east in the direction of the Ganges Valley.

If the Aryans arrived as a migration rather than an invasion, they coexisted for a time, without necessarily integrating with the darker skinned original inhabitants. The Aryan question is a very difficult one, not only because of the Nazi appropriation of the history and symbolism of Aryan predominance, but also because of the idea that the Aryans introduced the progenitor of Hinduism into India, which would imply that Hinduism is not a truly representative Indian institution. That would never be an easy fact for Hindu nationalists to accept, and indeed, many will not accept it.

By 1300 BCE, the Indus Valley Civilization had largely disappeared, although elements of its urban culture remained to be absorbed into a new social order. That said, when the cities were depopulated, sometime in the early to mid-second millennium BCE, they were not reoccupied, so time and the environment took their toll, along with the increasing population on the Indian subcontinent. The growing population needed more land for cultivation and housing, which meant that eventually any sign of the Harappan Civilization was lost.

However, in the early 19th century, while India was under British rule, a new class of scholars fanned out across the land to study the ancient sites. These early British scholars, who were influenced by the Enlightenment and were like other archaeologists studying the ruins of Egypt and Mesopotamia at that time, had a great respect for premodern India, especially its Hindu and Buddhist past. These early Western scholars of the pre-Modern Near Eastern and Far Eastern worlds became known as “Orientalists,” as their studies related to anything ancient and to the east of the Hellenic world, including Egypt.

Within the first couple of decades of the 19th century, several sub-disciplines within the Orientalist field began to develop. Egyptologists were those who studied ancient Egypt, Assyriologists covered most of ancient Mesopotamia and Persia to some extent, and Indology referred to the study of ancient Indian culture and languages. Max Müller (1823-1900), a German, was a pioneer in the field of Indology, translating many formerly obscure Sanskrit texts, but given that India was a British colony in the 1800s, most of the early Indologists were British and their focus was on the archaeological sites left by the Aryans. Later, in terms of physical culture, language and religion, the interest revolved primarily around Sanskrit and the early Vedic, Hindu and Buddhist religions. India had a wealth of materials for these early Indologists to work with, from obscure texts hidden away in monasteries

and temples to monuments that had been reclaimed by time and war.

As these British scholars were searching for overlooked Buddhist sites in the Indus River Valley, they discovered the ruins of Harappa, and then Mohenjo-Daro, in 1924 (Avari 2007, 40-42). The earliest surveys of those sites gave way to excavations in the region and the eventual realization that an entirely new civilization had been discovered that pre-dated any other culture in India. In fact, by the middle of the 20th century, scholars had determined that the Harappan Civilization, as it came to be known after the first city to be discovered, was contemporary with the first civilizations of Egypt and Mesopotamia.

The Culture

Unlike ancient Egypt and ancient Mesopotamia, where the end of dynasties brought drastic declines in central authority, culture and the standard of living, this was not the case for the Harappan Civilization. It was once believed that the Early and Mature Harappan cultures were distinct, but in recent decades Indus scholars have recognized the continuity of traditions that carried over from the two periods (Avari 2007, 30). The major difference, though, was that the culture of the Mature Harappan was more extensive and complex, and the cities were larger and more developed. There is more evidence of writing, monumental architecture, science, art, long-distance trade and an early global system.

The Mature Harappan culture was contemporary with the Akkadian and Amorite dynasties in Mesopotamia and the Middle Kingdom in Egypt (Kenoyer 1999, 17), and though there are no known texts that connect the Harappans with the Egyptians in a direct way, there are numerous cuneiform texts from Mesopotamia that document the relationship between the Harrapans and the Mesopotamians. Texts from the reign of Sargon (ruled ca. 2296-2240 BCE), King of Akkad, describe receiving ships from the land of Meluhha, and modern scholars of ancient Mesopotamia have identified Meluhha as the Indus Valley.

Although no specific cities are ever mentioned, it is believed that ships left India through a port in Lothal on the Gujarat-Kathiwar coast (Avari 2007, 48). Copper was among the most prized exports that left the Indus region (Haywood 2005, 76), which would have originated from many different points in the Indus region and beyond. Due to its size and its importance as a regional center on the Saraswati River, it is likely that shipments of copper would have sailed past Kalibangan. It is also likely that Harappans who visited Mesopotamia would have lived in Kalibangan, and that more than a few Mesopotamians would have likewise visited the city on the banks of the Saraswati River.

The trade and diplomatic relationships between the Indus cities and Mesopotamia were so developed that there were Indus interpreters living in Akkad and other Mesopotamian cities (Kuhrt 2010, 53). Furthermore, some texts demonstrate that the Indus cities also had relations with other Mesopotamian cities, in addition to Akkad. For example, one cylinder inscription from the reign of the ruler of the city of Lagash, Gudea (reigned ca. 2144-2124 BCE), demonstrates that the connections were widespread on both ends. Part of the inscription relates that silver was one of the most coveted commodities to come from the Indus Valley: "Many other precious materials were carried to the ensi, the builder of the Ninnu-temple: from the copper mountains of Kimash – (after) the soil had been prospected (for copper ore) – its copper was mined in clusters; gold was delivered from its mine (lit.: mountain) as dust for the ensi who wanted to build a house for his king, for Gudea they mined silver from its mine (lit.: mountain), delivered red stone from Meluhha in great amounts." (Pritchard 1992, 268). The text further notes that Gudea needed the materials to build a new temple.

Other precious stones and commodities were also listed as coming from the Indus Valley: "When he (Gudea) was building the temple of Ningirsu, Ningirsu, his beloved king, opened up for him (all) the (trade) routes from the Upper to the Lower Sea. . . He imported (lit.: brought out) esi wood from the mountains of Meluhha and built . . . He imported nir stone and made it into a mace with three lion-heads; from the Hahhum mountains, he imported gold in dust-form and mounted with it the mace with the three lion-heads. From the mountains of Meluhha he imported gold in dust-form and made (out of it) a container (for the mace)." (Pritchard 1992, 269).

Unfortunately, no Indus cities are ever mentioned in any of the Mesopotamian texts, so it cannot be said for sure what role Kalibangan played in international trade, if any. With that said, it can be assumed that due to its relative size it must have played at least a secondary role, where local materials made their way through the city and foreign goods were traded in its market. In the same vein, while there is also no evidence that the Egyptians and Harappans had direct contact with each other, the Egyptians used the precious stone lapis lazuli in much of their art, and since lapis lazuli can only be found in what is today Afghanistan, it could only have been brought into Egypt through long-distance trade routes. There are no Egyptian sources that mention Egyptians themselves embarking on such long routes, but the trade links between Mesopotamia and Egypt are confirmed, suggesting that Mesopotamian traders served as middlemen between the Egyptians and Harappans.

Many of the essential elements of the Mature Harappan Civilization still remain a mystery to modern scholars. One of the most enduring questions is whether the Harappan culture was ever a unified empire, which would have been in the Mature

Harappan Period if at all, or if it was instead a collection of city-states, similar to different periods in Mesopotamian history and the Maya in Mesoamerica. The grid pattern of the streets in the largest Harappan cities and similar overall structure has led many scholars to assume a central authority or influence and in the least suggests “a high degree of competency in management and administration by those in authority” (Avari 2007, 45). The idea is that the uniformity of the cities either began in one, or just a few of the major cities, and then spread consciously to other cities, such as Kalibangan. The other theory is that the major cities of Mohenjo-Daro and Harappa may not have consciously spread the grid pattern of street building to other cities, but that the other cities were so connected with the larger cities through trade that they deliberately adopted the style.

The size of the Harappan cities unfortunately does not help clear up the issue. Mohenjo-Daro, Harappa and Ganwerilwala, the three largest Harappan cities, may have had as many as 40,000 inhabitants each, while cities in the next tier of size, which include Kalibangan, had at least 1,000 inhabitants. The numbers of the largest cities are comparable to cities in Mesopotamia and Egypt at the time, but do not necessarily make an argument for or against a unified kingdom or empire. The three major cities may have been capitals of regional empires, with Kalibangan and other cities of similar size being provincial capitals (Haywood 2005, 76). Whether or not the Harappan cities were part of a unified empire or regional capitals may never be known, but the complexity of the layout of those cities is certain.

The largest cities, and even some of the small Indus villages, featured street layouts according to the cardinal directions. This has led many modern scholars to conclude that the Indus cities’ grid patterns were related to astronomy, which in turn was related to their religious beliefs (Kenoyer 1999, 52). This theory is quite logical when one consider the sacred role that architecture played in the Bronze Age. The contemporary pyramids of Egypt and the ziggurats of Mesopotamia were both connected to those cultures’ ideas of the celestial bodies and their roles in religion, but there is no evidence indicating that those cultures built streets or roads that were somehow connected to the heavens. With that said, neither the Egyptians nor the Mesopotamians built streets that were as perfectly laid out on a grid pattern as the Indus streets were. City streets in ancient Egypt and ancient Mesopotamia seem to have evolved more organically, following what were sometimes circuitous routes. They were not clearly planned as the streets in the Indus Valley cities were. The question of the symbolism of the Indus Valley cities’ grid pattern streets raises the even bigger question about the nature of the Harappans’ religion.

There are a number of archaeological clues that help possibly outline the Harappans’ religion, some of which are from Kalibangan. Religious scholars,

historians, and anthropologists have also identified a number of elements in the later Vedic and Hindu religions that may have originated in the Indus Valley, but much of this remains conjecture (Avari 2007, 48). No temples have been positively identified in any of the Indus cities, although many believe a large one was discovered in Mohenjo-Daro (Kenoyer 1999, 62), and scholars are not certain what is religious among the plethora of smaller items that have been discovered at the numerous Harappan sites. Some of the most common smaller items discovered at Indus Valley excavations are seals. Seals were commonly used in ancient times by royalty and other powerful people to send official messages and other items. As such, seals had great authority and were sometimes displayed with religious motifs. Unicorns were common on many Indus seals, indicating that they may have been mythological animals that were venerated (Kenoyer 1999, 18).

Some Harappan seals show a possible Mesopotamian influence, while others appear to show scenes of religious rituals that are known from the Hindu religion (Kenoyer 1999, 114). A well-known seal from Mohenjo-Daro features a figure seated in a "yogi" position, which many scholars think is an example of a religious symbol (Kenoyer 1999, 113). The "Shiva" seal and the potential references to religious rituals on the other seals has led some scholars to see a fair amount of religious continuity from the Harappan culture to later periods in Indian history. The yogi seal also has writing on it, which would no doubt be helpful in understanding the Harappan religion if it could be deciphered, but unfortunately no one has yet been able to crack the Indus code.

The Indus Valley Civilization possessed all the hallmarks to meet the classical definition of a civilization, including a written language. Archaeologists have identified more than 4,200 inscribed objects, with most coming from Mohenjo-Daro and Harappa, but a sizable number have also been discovered in Kalibangan. The written language has 419 known signs, but it has yet to be deciphered (Avari 2007, 50-51). Scholars believe that due to the number of characters in the Indus language, it was most likely a logosyllabic or logoconsonantal written language, similar to the ancient Egyptian language, but unlike the ancient Egyptian language there is no known script that accompanies it. The ancient Egyptian hieroglyphic script remained unknown until the Rosetta Stone was discovered in the late 18th century, but so far, all known examples of the Indus script have been found alone. If the Indus script is ever deciphered, the world would know much more about the Harappans' religion, as well as the ethnic identity of the Harappan people. Many historians believe that the Harappans were of Dravidian ethnicity (Haywood 2005, 76), but that theory raises more questions than it answers. If the Harappans were Dravidians, and if they migrated into southern Indian where most of the Dravidian

people have lived for centuries, it's not clear why they didn't carry elements of the Harappan culture with them.

Kalibangan's Early Years

The ancient site of Kalibangan is located in what is now known as the Ghaggar-Hakra Valley, just over 200 miles northwest of the modern city of Delhi in the region of Rajasthan (Avari 2007, 32). As mentioned earlier, Kalibangan was located on the banks of the Saraswati River, which is now a dry riverbed, but back then, the Saraswati River ran parallel with the Indus River in a primarily east-northeast direction from the Indian Ocean, through the plains of northcentral India into the Siwalik foothills of the Himalayan Mountain range (Kenoyer 1999, 28-29). Since the Indus Valley is a wide, flat valley, there were many tributaries of both the Indus and Saraswati rivers in antiquity.

The two major tributaries of the Saraswati River were the Sutlej River and Drishadvati River, and Kalibangan was located at the confluence of the Saraswati and Drishadvati, on the southern escarpment of the Saraswati River (Kenoyer 1999, 28). Recently, airborne electromagnetic surveys have revealed numerous paleochannels from the pre-Harappan and Harappan periods (Mishra and Mallick 2008, 1657), which indicate that even more tributaries once existed there, as well as artificially constructed canals. Kalibangan's location reveals much about its life and importance in the wider Harappan Civilization, including being situated on an escarpment, which was more than likely the result of defensive considerations.

The city's location relative to one major river and several tributaries suggests that trade played a role in its foundation, and it may also explain why the site flourished in the Early and Late Harappan Periods. Kalibangan would have served as a central point for trade coming from deeper in the Indus Valley to the coast and from foreign locations, such as Mesopotamia, headed into the interior. The fact that the Saraswati may not have reached the sea during the Early or Mature Harappan Periods (Possehl 2002, 9) means that overland routes were probably required for transporting goods between the river and the sea. There were existing overland routes that connected the Indus and Saraswati Rivers, which also would have placed Kalibangan in a prime location.

There is some evidence that Kalibangan's location was chosen for religious or spiritual reasons. The Indus and Saraswati Rivers had religious and practical significance for both the Harappans and the Aryans who came later. In fact, the Saraswati River may have been even more highly regarded by the Aryans. The presence of what appears to have been a Harrapan ritual structure just outside of Kalibangan, on the banks of the Saraswati River, would certainly suggest the river

held religious significance for the Harrapan people.

Electromagnetic surveys of the area around Kalibangan and other archaeological discoveries show that it was once an agriculturally rich region. The canals would have been used to transport people between rivers, and also to irrigate the fields of the area. Rich alluvial soils from the Saraswati River provided the perfect ground to grow a wide array of different crops that were needed to sustain a relatively large and growing population. Evidence shows that the people of Kalibangan developed advanced agricultural techniques from an early point, and these were needed to feed the population of a relatively large and growing city.

Indus Valley cities varied widely in terms of physical size and population, ranging anywhere from what would be a small village of a couple dozen people to cities of 50,000 people or more. Modern archaeologists and Indianologists rank the Indus cities by size into three categories, or tiers. The first tier is comprised of cities that encompassed areas of 200 acres or more (Avari 2007, 43). Harappa and Mohenjo-Daro were the two most prominent of the tier one cities, but there are about a half-dozen other cities that match the criteria of the category. Most of the cities in this category had populations of at least 10,000 people, while some, such as Harappa and Mohenjo-Daro, had populations that were greater. Besides the size in area and population, all of the tier one cities also had walls and other permanent structures, such as baths.

The second tier of cities were slightly smaller than the first tier, with an average of 50 acres and populations ranging from the hundreds up to around 10,000 people. Although the tier two Indus cities were smaller than the tier one cities, they possessed many of the same architectural features, including walls and other buildings (Avari 2007, 44). Kalibangan was a tier two city, with an estimated population of at least 1,000 people, a wall, and other architectural features that were also present at Harappa and Mohenjo-Daro. Kalibangan also had a few unique architectural features that will be discussed further below.

The process by which the Indus Valley region came to be settled was gradual, but once Kalibangan and the other cities were built, their development was relatively quick. Humans lived in the Indus Valley for quite some time during the Paleolithic and Neolithic Periods, first hunting and gathering their food, and then developing agriculture around 8000 BCE (Avari 2007, 27). The march toward civilization was similar to the processes in Egypt and Mesopotamia occurring around the same time, with small, semi-permanent settlements becoming permanently established and developing as focal points for trade, protection and regional power. The permanent settlements grew into towns and cities, regional economies developed, and

specialized trades became important. The settlement at Kalibangan began around 3000 BCE and lasted until about 2600 BCE (Avari 2007, 32).

As with any archeological site from such an early period in human development, much of the material excavated from Early Harappan Kalibangan consists of pottery and pottery shards. Despite not being as impressive as other archaeological material, such as statues or large monuments, pottery is often just as important because it provides archaeologists with a lot of information about the people being examined, ranging from daily habits to their ethnicity. Pottery is often used by archaeologists to create a chronology of a society when written records are lacking or unable to be deciphered, as is the case for the Harappan Civilization.

Early Harappan pottery in Kalibangan has many similarities to pottery discovered at other sites around the Saraswati River, which led to Harappan scholars terming this early period of Harappan culture the period of "regionalization" (Dikshit 2012-2013, 3). In terms of the Harappan Civilization, the period of regionalization actually began before the Early Harappan Period and lasted for its entirety (Kenoyer 1999, 24). As the name indicates, it was marked by the importance of regional urban centers.

For a number of reasons, Kalibangan is believed to have been one of the primary centers along the Saraswati River during this time and the Mature Harappan Period. The fact that Kalibangan was one of the largest cities along the Saraswati River, especially within its immediate vicinity, points to its importance; but pottery evidence also reveals much about Kalibangan's significance.

B. K. Thapar, one of the primary archaeologists at Kalibangan, identified six different types of pottery from the site, termed "fabrics." The types were given letter designations (A, B, C, D, E and F) in order to track them better in other sites throughout the Indus Valley, and in the years since Thapar's work at Kalibangan in the 1960s, several of these fabric types have been found at other sites in the Indus Valley (Garge 2010). The fact that Kalibangan pottery was found at other Indus sites is important in itself, but even more so when considering how widely distributed the pottery was and the fact that it was the most common type of pottery found in many places (Garge 2010). The fact that non-Kalibangan pottery was rare in Kalibangan is also important. All of this demonstrates that Kalibangan was an important regional center in the Early Harappan Period and that it at least wielded some amount of economic influence over neighboring cities and villages.

The pottery discovered at Kalibangan from the Early Harappan Period was certainly important, and so too were the bricks from this period. Early Harappan Kalibangan was already a sophisticated city, complete with streets, a wall, and other

buildings, but in order to build those things, the people needed to make bricks, which is in itself an advance in civilization because it required knowledge of kilns. The knowledge needed to make and operate kilns demonstrates a level of cultural sophistication that is only common in the late Neolithic for other societies. Bricks excavated at Kalibangan from the Early Harappan Period were smaller than they were in the Late Harappan Period (Dikshit 2012-2013, 3), which indicates that new knowledge was brought to the city between the two periods. Much the way changes in pottery are often indicative of new cultural influence, or even a new culture in a specific city or region, the appearance of new brickmaking techniques also indicates new cultural influences.

Although not as exciting as other aspects of archaeology, a further examination of the bricks and brickmaking techniques may help reveal more about the overall construction of Kalibangan, and excavations at Kalibangan have revealed that it was a fully functioning city with many architectural features during the Early Harappan Period. The Indus Valley cities in general were not known for large religious monuments or temples, but the larger sites all had baths and other washing areas. The baths in particular have garnered much academic interest - at Mohenjo-Daro, the so-called “Great Bath” was centrally located in the city, which indicates that it was unlikely to have been a public bath and was probably ritualistic in nature. (Kenoyer 1999, 64). Early Kalibangan also had baths and washing areas, although they were not as large as the Great Bath at Mohenjo-Daro, and the ruins of latrines, drains and washing areas have also been uncovered on the Early Harappan level.

The people of Kalibangan also practiced irrigation along the plain just outside of the city (Kenoyer 1999, 42). The ancient canals, discovered through the electromagnetic surveys mentioned earlier, brought water from the Saraswati River to the plain, which allowed Kalibangan to grow in size and population.

Evidence indicates that by 2800 BCE, Early Harappan Kalibangan was a regional center and in many ways a smaller version of Mohenjo-Daro and Harappa. Beginning around that time, Kalibangan’s city planners began building streets along a grid pattern similar to the larger Indus Valley cities (Kenoyer 1999, 52). The development of the streets continued until about 2600 BCE and facilitated Kalibangan’s growth as a regional center. As more merchants and travelers came through Kalibangan on trips along the Saraswati River, an efficient street system was needed to keep the city orderly and clean. The increase of people in and around Kalibangan may also have brought more trouble, although there is little evidence of any major problems coming from the outside. As mentioned earlier, some scholars believe that the streets of Indus cities had a religious significance, which, if so, likely also would have been the case at Kalibangan.

The single feature from Early Harappan Kalibangan that may indicate threats existing outside the city is the presence of a wall. Walls were a standard feature in all of the first and second tier Harappan cities, no doubt to protect the inhabitants from outside forces, but there are other reasons why walls were built. Walls sometimes served to separate one class of people from another, such as nobles from lower classes, or to separate the sacred from the secular. Unfortunately, it is unclear why walls were built at Kalibangan, or at any other Harappan site, but either way, Kalibangan's Early Harappan wall was approximately 880 by 544 feet (a relatively large circuit for the era) and was built in two phases (Possehl 2002, 74). In the first phase, the wall was made of mudbrick and was about six feet thick. The second phase of construction on the wall thickened it to nearly 13 feet, with the face plastered in mud (Possehl 2002, 74). Such a large and thick wall would suggest that the leaders of Kalibangan feared an attack from the outside or perhaps were attacked at some point in their history, but there is scant archaeological evidence of any major attacks on the city, and there is no evidence of major military activity on the part of Kalibangan's residents. Until more evidence is uncovered, the existence of the Indus Valley Civilization's walls will remain a topic of speculation.

The end of Early Harappan Kalibangan was the result of a number of factors, as was the case for Early Harappan society in general, but one important factor was unique to the city of Kalibangan. The overextension of the economic and political networks certainly played a role, although they were probably not direct factors in Kalibangan's decline. The networks that became disrupted in the larger cities of Mohenjo-Daro and Harappa would have affected Kalibangan by temporarily ending or limiting the connections that the sub-regions within the Indus Valley shared. Kalibangan certainly would have experienced a level of impoverishment and a loss of prestige, but the city continued on and retained some regional influence.

The desiccation of the rivers that adversely affected some of the Indus Valley cities at the end of the Early Harappan Period does not appear to have been much of a factor in Kalibangan's decline. Although the Saraswati River did dry up, it did not happen until hundreds of years later, at the end of the Mature Harappan Period (Haywood 2005, 77). With that said, the drying up of other rivers in the Indus Valley would have contributed to the overall impoverishment of the region through reduced agricultural input and trade. Excavations from the Early Harappan level at Kalibangan also show no evidence of a burn layer, which serves to rule out potential explanations rather than offering any (Possehl 2002, 49). The lack of a burn layer more than likely rules out an invasion - as invasions are usually accompanied by extensive burning - or a widespread natural fire. Other signs of destruction also tend to accompany burn layers, especially if they are the result of humans, which is not

the case with Early Harappan Kalibangan. Burn layers and apparent human destruction are evident at other Early Harappan sites (Possehl 2002, 48), but, for whatever reason, Kalibangan avoided this fate.

It appears that Early Harappan Kalibangan declined alongside the general decline in the Indus Valley, but there is also evidence to show that the city did suffer a disaster. Excavators of Kalibangan detected an extreme displacement of strata at the Early Harappan level, which points toward a major event or disaster happening quickly. Since there is not an accompanying burn layer, archaeologists have concluded that the displacement was probably caused by an earthquake (Possehl 2002, 48). This earthquake does not appear to have affected many other cities in the Harappan Civilization (or it its effects were masked by human destruction), but since the apparent earthquake was big enough to cause the strata at the Early Harappan level to be displaced, the destruction was probably bad enough that it restricted growth at Kalibangan. That said, the city did not take long to rebuild, because by about 2500 BCE, Kalibangan was growing again as a part of the Mature Harappan Period.

Mature Harappan Kalibangan

Scholars once believed that the Early Harappan Period (previously known as the Pre-Harappan Period) and the Mature Harappan Period represented two related but distinct cultures, but as excavations conducted in the Indus Valley led to more understanding of the Harappan culture, it became clear that there was more continuity between the two periods than there were differences, so scholars began to see them as different developmental phases but not distinct cultures. Indeed, Kalibangan seems to have retained its Early Harappan attributes, but there were numerous additions made to the city and possible influences from an outside cultural group.

Among the changes was the city's growth in size. Archaeologists believe that the city grew in this phase to have at least 1,000 people, and possibly slightly more (Possehl 2002, 173). The walls prevented the city from sprawl and assisted modern archaeologists in coming to a conclusion regarding its size, along with the fact that they are able to compare the size of Kalibangan to the larger well-excavated sites of Harappa and Mohenjo-Daro. Excavations of the Kalibangan cemetery (discussed further below) also help historians estimate an approximate size for the city, and while it may not seem like a very large city by today's standards, for the Bronze Age it was quite large and would have been full of life.

A visitor to Mature Harappan Kalibangan would have found a complete market along the perfectly laid out streets. A noble or member of the elite would have been

visible as well, living on the highest point or citadel of the city (Avari 2007, 32). Citadels were common in many places in antiquity and were usually the site of the city's most sacred temple, as well as the residences of the elites. Citadels were also the most defensible part of the city and often the site of a last stand made by defenders.

Although it is not known for sure what the purpose of Kalibangan's citadel was, some reasonable conclusions have been made based on the available archaeological evidence. The citadel of Kalibangan was built over the Early Harappan phase of the town, and sometime around 2500 BCE, when the population of the town rapidly grew, the area just below the citadel began to be populated. Excavations of the site have determined that most of the city's population lived in the lower town (Possehl 2002, 76), and this population distribution of Mature Harappan Kalibangan would seem to suggest that the elites inhabited the citadel while the peasants, tradesmen and merchants lived in the lower city. The markets would have been located in the lower city, and any foreign merchants visiting the city would also have stayed in the lower city. The elites would have been better protected in the citadel in the event of an attack, and the view would have afforded them a strategic view of the area. There is also other archaeological evidence that suggests Kalibangan's citadel was home to the city's elites.

Although no monumental temple was uncovered at Kalibangan and there are scant examples of such architecture even in the largest Indus cities, the citadel of Kalibangan shows some signs of religious activity and significance. A number of platforms have been uncovered that may have served as altars, along with the ruins of baths nearby that possibly had a sacred context. A number of mudbrick platforms were uncovered on the southern half of the citadel. These structures, which have been termed "fire altars" by a number of scholars, were carefully built oval structures that were sunk in the ground and lined with mud plaster or bricks (Possehl 2002, 76). The sacred aspects of fire in the later Aryan culture and its possible connection to Kalibangan will be discussed further below, but for now it is important to consider that the altars were discovered in both public and residential areas of the citadel (Bryant 2001, 160). The fact that the altars were public would certainly point toward a religious activity shared by the community, and the fact that some were in private residences does not necessarily mitigate this idea. After all, private religious practice has been documented alongside state religion in the Bronze Age cultures of Egypt and Mesopotamia. In ancient Egypt, for instance, private practice of religion was commonly done by individuals donating votive stelae and statues to temples.

Although there is no evidence of similar practices in the ancient Indus Valley,

ritual bathing may have been akin to this practice. A well and baths are located next to the fire altars, and this layout was common at many Indus sites. The location of the baths next to the fire altars on the Kalibangan citadel appears to have religious significance, possibly indicating a ritual cleansing area that one must go through before tending to the fires. Also located next to the baths was a bovine burial pit, immediately leading to more academic discussion and debate because cows became a sacred animal later in Indian religion. Those who believed that the Aryans were native to India and possibly related to the Harappan Civilization, drawing from knowledge about Vedic Indian religion, have argued that the entire context of the fire altars, baths, and bovine burial must have been sacred in nature (Bryant 2001). While most historians do not agree with the native Aryan theory, many are willing to accept that the mudbrick platforms discovered at Kalibangan were religious in nature and that the area of the south citadel was a sacred space. With that said, others believe that the fire altars were actually baking pits and that the purpose of the area was much more mundane (Bryant 2001, 161).

Both the citadel and the lower city of Mature Harappan Kalibangan had walls. The existing Early Harappan walls around the upper city were retained, and a new wall was built for the new, lower city. There were three gate entrances to the upper city and two to the lower city. Mudbrick homes were in both parts of the city, although none were located on the southern part of the citadel, further suggesting that was probably where a sacred area was located (Possehl 2002, 77). The streets of the lower town generally ran in a north-south direction, terminating at the walls.

A structure was also excavated just east of the lower town, and although its purpose remains uncertain, it is strongly believed to have had a ritual significance (Possehl 2002, 77). The probable ritual structure overlooked the Saraswati River, which was a sacred site for the ancient Harappans, and the site of this supposed ritual structure may be a reason why Kalibangan was built where it was, but further work will need to be conducted before anything can be confirmed. Unfortunately, much of how the people of Kalibangan practiced their religion, or even what their religion was, remains conjecture at this point.

Almost 1,000 feet west-southwest of the citadel are the remains of the Kalibangan cemetery. The cemetery is located downwind from the settlement and downstream from the floodplain (Possehl 2002, 171), which demonstrates a certain degree of practical planning by the original builders. The rich alluvial fields near Kalibangan would have been untainted by the decay of human bodies, and any seepage from the bodies into the water supply would have been minimal or even nonexistent. The location may also have had a religious significance since corpses were viewed as impure by many of the peoples of ancient India. This belief was articulated clearly

in later periods of Indian history, as well as in Iran in the *Avesta*, and it also applied to the Harappans.

The cemetery was discovered rather accidentally after a heavy rainfall produced outlines in the soil that suggested burials or graves, and the excavation of the cemetery revealed 102 inhumation sites, which is too small to represent the entire city of Kalibangan over its long history (Possehl 2002, 173). The number suggests that the cemetery was used primarily or exclusively by the elites of Kalibangan, but a closer examination uncovered even more complexities in the necropolis.

As archaeologists began their work at the Kalibangan cemetery, they quickly realized that it was no ordinary necropolis. In fact, they only found human remains in 88 of the 102 graves, and after further examination, the graves with no human remains were classified into two types, which were actually cenotaphs (Possehl 2002, 173). Traditionally speaking, a cenotaph is a type of tomb where the body has been stored elsewhere. The owner's body may never have been in the cenotaph, or it was for awhile and reinterred somewhere else. Whatever the reason for the lack of a body, the tomb remains as a monument for the owner. In the ancient world they were common for elites, and at Kalibangan there may have been multiple reasons for their existence.

The cenotaphs contained pottery and other possessions that would have had some value, obviously pointing toward a belief in the afterlife. It also indicates that the graves were intended to be more functionally for the dead than for the living. Other than the items that were found in the graves, there is no evidence that the living brought offerings or other gifts to the cenotaphs once they were covered.

More importantly, though, the cenotaphs were located in a different section of the cemetery than the graves containing human remains (Possehl 2002, 173). This difference in burial type and location suggests a few different possibilities that could reveal more about life at Kalibangan. For example, the separate locations of the cenotaphs and the normal graves indicates that the two groups represented different social classes, although archaeologists are currently unable to determine which, if either, of the groups was the elite. Another possibility is that the cenotaph graves belonged to individuals who died away from Kalibangan – perhaps on a military campaign, a diplomatic mission, or, more likely, conducting long-distance trade – and members of their families were unable to retrieve their bodies (Possehl 2002, 173). It is even possible that the spatial separation of the different grave sites and the manner of burial could also indicate more than one ethnic group inhabiting Kalibangan (Possehl 2002, 174).

It could be the case that since the number of graves is much lower than the actual

population of Kalibangan, the graves were all for members of the elite, but there were two different groups of elites, such as nobles and priests or soldiers.

A picture of the passage to the cemetery

All of these possibilities are plausible and not necessarily exclusive of one another. India has always been a land of many different ethnic groups, so such theories represent a highly realistic possibility. It is also possible that the elites were of a different ethnic group than the majority of the people of Kalibangan, and since the elite would have traveled more, it is reasonable to postulate that they may have died while on diplomatic missions away from the city.

Agriculture was the lifeblood of all pre-modern civilizations, and especially for urbanized societies such as the Mature Harappan Civilization. Mature Harappan Kalibangan may have been alive with trade and markets and presided over by an elite class residing on the citadel, but their sustenance came from the surrounding

area. Farming techniques and the food produced in the fields would have been much like they are today in that region of modern India. The farmers would have been reliant on the seasonal rains and monsoons to determine planting and harvesting times, and they would have used oxen and manpower to work the fields. The vast majority of the population would have survived on a diet heavy in wheat, barley, and rice, with occasional vegetables and meats thrown in for taste and variety. The elites living on Kalibangan's citadel, though, would have had the luxury of an expanded menu due to their control of trade (Kenoyer 1999, 170).

Archaeological work at Kalibangan has revealed an abundance of evidence relating to agriculture. One of the most interesting discoveries was of a plowed Mature Harappan field just outside the town. Although this discovery may not sound like much, it is the earliest known plowed field in the world (Kenoyer 1999, 163). Domestic crop agriculture was being practiced in Egypt and Mesopotamia at the same time, but there is no evidence that those peoples ever plowed their fields. The plowed field of Kalibangan was most likely done by oxen, which were common animals in the region during the Mature Harappan Period (Kenoyer 1999, 163). The crops that were harvested in the first plowed field would have varied according to the season, but more than likely there would always have been something growing.

Agricultural production during this phase was localized. Cities located closer to the coast were more dependent on the monsoon for the growing season. The farmers in the monsoon-dominated region planted their crops in the summer, during or after the monsoon, and harvested them in the fall. Rice was one of the most common monsoon crops in the region of Gujarat by 2600 BCE, but it was grown later in the Indus Valley, including around Kalibangan (Kenoyer 1999, 163).

Since Kalibangan was located on the alluvial plain, its farmers followed a different planting and growing pattern and originally grew different crops. The fields of Kalibangan were planted in the fall, fed by winter rains, and harvested in the spring. Wheat and barley were the dominant crops in the alluvial region around Kalibangan, and besides the crops, agriculture around Kalibangan involved a variety of different animals, both for food and for work.

Extant seals from Kalibangan and other Indus cities can help historians deduce how animal husbandry was practiced in Mature Harappan Kalibangan. The prominence of bovine species on the seals, combined with modern farming practices, indicates that oxen played a prominent role as draft animals, and possibly as food as well (Kenoyer 1999, 162). Other animals that were consumed in sites throughout the Indus Valley include sheep, goats, and chickens (Possehl 2002, 83). Although the cow became a sacred animal later in Indian religion and consumption

of them was proscribed, there is no evidence to suggest that the Harappans had similar religious sentiments.

Among the remains of animals that have been found at Kalibangan, none are more puzzling than those of equids. A terracotta figurine of a horse from the Indus site of Pirak has been dated to around 1600 BCE, which would place it at the end of the Harappan Civilization and in the Late Harappan Period (Kenoyer 1999, 177). This may not seem like a very important item, but it is generally believed that the Aryans first brought horses to India around that time or just after it.

The chronological overlap could explain the existence of that figurine, but not others that came earlier, or the remains of multiple horses found at Kalibangan. Equid bones, teeth, and figurines have all been discovered at Kalibangan, which raises many problems concerning Indian chronology, particularly regarding the later Aryan incursion. Some native Indian scholars believe that the equid evidence from Kalibangan indicates that the Aryans may have originated in India and lived simultaneously with the Harappans, or that the Aryans were even Harappans themselves. In contrast, other scholars simply argue that the equid remains at Kalibangan are not strong enough evidence from which to make sweeping chronological generalizations, and that the remains are consistent with strata from a later period when the Aryans had already introduced the horse to the region (Bryant 2001, 173). This may seem like a logical answer, but the drying of the Saraswati River and the depopulation of Kalibangan is generally believed to have taken place before the arrival of the Aryans in the region.

Kalibangan’s decline was slow and gradual. Likely starting around 2000 BCE, the city was mostly depopulated and well on its way to being nothing but ruins by 1500 BCE. It was once believed that the warlike Aryans destroyed the Harappan Civilization, but that theory has completely fallen out of academic favor due to the lack of evidence demonstrating any kind of invasion. Today, most scholars believe that a combination of factors brought down the Harappan Civilization, and at Kalibangan specifically, environmental changes played a major factor. Thus, by the time the Aryans arrived in the region around Kalibangan, the Saraswati River was a shadow of its former self and Kalibangan was no longer a true city.

The overextension of trade and political networks was discussed earlier as one of the factors for the collapse of the overall Harappan Civilization, and this no doubt played a role in Kalibangan’s decline. After 1800 BCE, there is no evidence of long-distance contact and trade between the Indus Valley and Mesopotamia, which was probably caused by a number of internal factors. Once trade networks were disrupted in the larger cities of Mohenjo-Daro and Harappa, regional centers such as

Kalibangan would also have been adversely affected (Kenoyer 1999, 173).

That said, the disruption to the trade networks alone would not have been enough to destroy Kalibangan, as evidenced by a transition to localization by some of the surviving Harappan cities from about 1900 BCE until 1300 BCE (Kenoyer 1999, 174). The region best suited to survive the decline and transition into the localization period was the coastal area, which was more immune to the capricious nature of the climate and the shifting of the rivers.

Recent studies suggest that the final nail in Kalibangan's coffin was a combination of changes in the Indus River and climate change. The concept of climate change has been politically charged in recent years, but even a cursory study of pre-modern history shows that slight changes in global climate patterns often had disastrous consequences for cities, kingdoms, and civilizations. In Kalibangan's case, the first of its problems came when sedimentation and tectonic movement pushed much of the water from the Saraswati River west into the Sutlej River. The Sutlej River in turn sent that water into the Indus River, then east into the Yamuna River, which flowed into the Ganges system (Kenoyer 1999, 173). The changing river patterns caused flooding along the Indus, which led to refugees and other problems in the biggest cities. Secondly, and more important for Kalibangan's immediate survival, it sped up the process of the Saraswati River's desiccation.

Stratigraphic evidence shows that along with the changing river patterns, a prolonged period of decreasing rainfall contributed to accelerating the drying up of the Saraswati River. The area around Kalibangan experienced significant rainfall beginning around 3000 BCE, which coincided with its rise to regional prominence at the beginning of the Early Harappan Period. By the early Mature Harappan Period, that rainfall had peaked, but by 1000 BCE it had decreased tremendously from where it had been 2,000 years prior (Dikshit 2012-2013).

Once the Saraswati River had dried up or nearly dried up, it was just a matter of time before Kalibangan was abandoned. The river provided one of the primary sources of transportation for trade, as well as irrigation for the fields. With no source of water or food, the people simply left.

It seems that Kalibangan's death was rather anti-climactic; but some historians still continue to search for evidence that invaders played a role in the city's demise. The first to articulate the Aryan invasion theory was Mortimer Wheeler, who in 1946 largely based his idea on passages from the *Rig Veda*. Scholars now know that not only was the *Rig Veda* compiled hundreds of years after the collapse of the Harappan culture, but that its use as a historical source is dubious at best (Possehl 2002, 238). Others have pointed to the sudden introduction of new pottery styles at

some Indus sites and the discovery of unburied skeletons at Mohenjo-Daro as evidence of invasion, but neither of these are proof that an invasion occurred (Kenoyer 1999, 174).

For many native Indian historians, the narrative has shifted to one where the Aryans were not invaders from outside of India, but native Indians who lived alongside and influenced Harappan culture. They point to Kalibangan as proof of their theory, arguing that the fire altars and the equid remains show a clear Aryan influence, long before they were believed to have entered India (Bryant 2001, 160). Where Wheeler once used the *Rig Veda* to argue that the Aryans destroyed the Harappan culture, native Indian scholars now use it to argue their alternate thesis.

Although Kalibangan ceased to be a settlement before the Aryans became the dominant people in northern India, its general vicinity and the Saraswati River in particular are mentioned in the *Rig Veda*. Most historians admit that some features of Harappan Civilization can be seen in the *Rig Veda*, but they also believe that the cities of the region, including Kalibangan, were clearly pre-Vedic (Avari 2007, 40).

Since the *Rig Veda* was first composed orally as early as 1700 BCE, some elements of Harappan society were still in existence and could thus be observed by the Aryans, but the references that relate to the Saraswati River are important to consider in terms of Kalibangan's lifespan. The Vedic texts refer to the region of Punjab/Indus Valley as Sapta-Sindhava, which is the "Land of the Seven Rivers" (Avari 2007, 1). The Saraswati River was clearly one of the seven rivers, and the Aryan goddess of learning was later associated with the river, which means that it was still viable when the Aryans arrived sometime after 1700 BCE.

In one verse, Saraswati is described as a life-giving embryo:

> "Let Vishnu prepare the womb; let Tvastr shape the forms. Let Prajapati shed the seed; let Dhatr place the embryo in you.
>
> "Place the embryo, Sinivali; place the embryo, Sarasvati. Let the twin Ashvins, the lotus-garlanded gods, place the embryo in you."

The Saraswati is often referred to in this anthropomorphic form, which could suggest that its existence as a river may have been over well before the oral Vedic verses were compiled. Other verses mention the life-giving abilities of the Saraswati River, including this one: "Your inexhaustible breast, Sarasvati, that flows with the food of life, that you use to nourish all that one could wish for, freely giving treasure and wealth and beautiful gifts – bring that here for us to suck."

Proponents of the native Aryan theory argue that this text proves that Aryans were

native to India or at least lived there during the Harappan Civilization because the Saraswati River was still flowing. Based on his archaeological work at Kalibangan, B.B. Lal has argued that the Saraswati River was dried up at Kalibangan by 2000 BCE, which would put the Vedic references at an earlier date (Bryant 2001, 167-8).

The Modern Discovery of Kalibangan

The remains of Kalibangan remained under modern fields and settlements well into the 20th century, unlike the major Indus cities, which were already being excavated decades earlier. Nonetheless, modern knowledge of artifacts from Kalibangan predated its discovery and the identification of the Harappan Civilization.

September 24, 1924 is generally viewed as the precise date when the modern discovery of the Harappan Civilization occurred and research began. Although the major Indus cities had been discovered before that time, scholars did not yet know what they had in front of them and thus were unaware the Harappan Civilization existed as a unique culture that predated all others in India. It was on that date in 1924 that British scholar John Marshall announced the discovery of Mohenjo-Daro and Harappa in the *Illustrated London News*. Marshall was convinced that these two cities represented a phase in Indian civilization that predated the Vedic Period, and that many more Bronze Age cities were waiting to be discovered beneath the modern settlements and fields of India. A week later, Assyriologist and Near Eastern archaeologist A.H. Sayce confirmed Marshall's periodization of Mohenjo-Daro and Harappa by noting the existence of Indus seals in Bronze Age Mesopotamia (Possehl 2002, 3). The confirmation led to archaeologists fanning out across the Indus Valley to look for more lost Harappan cities. Evidence pointing to the existence of some of these cities, including Kalibangan, had already been circulating throughout academia.

Some excellent examples of Kalibangan pottery had reached markets in Delhi and Bombay in the 19th century, where they were bought by British citizens and eventually ended up in British museums and universities. Some of those pieces were published in academic journals in the late 19th century, but the authors did not know of their origin or even the existence of Kalibangan (Possehl 2002, 3). It would not be until the late 1950s, after India had attained independence, that interest in Kalibangan attracted archaeologists.

The British may have led the way in late 19th century and early 20th century Indology, but native Indian academics took over Harappan archaeology after Indian independence in 1947. The site of Kalibangan was identified in the late 1950s, and excavations by the Archaeological Survey of India began in the 1960-1961 season,

led by B.B. Lal and B.K. Thapar. The two archaeologists worked for a total of nine seasons until the 1968-1969 season, although they were forced to occasionally suspend operations due to the extreme heat of the Thar desert.

Kalibangan proved to be a boon to Indus Valley archaeology since there was relatively little modern development on top of the site, which allowed the archaeologists to conduct a complete horizontal excavation. In fact, the work at Kalibangan marked the first horizontal excavation of an Indus site, which helped to explain much about life throughout the Indus Valley Civilization (Possehl 2002, 20).

The focus of many archaeological digs tends to be on the monuments, houses, temples, and other large structures, which was also the case at Kalibangan. The fire pits, streets, and cemetery help partially tell the story about how the people of the city lived and what they believed, but a lot of information can also come from some of the smaller items discovered, as well as the notable absence of certain items. For example, pottery and smaller items can often indicate more about the lives of non-elites, such as the different social groups and professions that were present at a specific site.

Among the various pots and pottery shards excavated at Kalibangan were several tools made of terracotta. Although terracotta has been primarily used throughout history for statuary and art, this ceramic style was used for building tools at Kalibangan. Length scales, hourglasses and plumb-bobs were all tools that have been unearthed in various parts of the site, and while the tools may not have been as sturdy as those made from copper or bronze, they were strong enough to get the job done and were just as sophisticated and accurate. Along with the terracotta tools, several pans that were used for balances and a number of weights made of chert and agate were discovered (Balasubramaniam and Joshi 2008, 588). An examination of the tools discovered at Kalibangan has led historians to conclude that the Harappan people developed advanced and accurate scales and measurements - in fact, it has even been determined that the standard unit of measure in the Indus Valley was 17.63 millimeters. (Balasubramaniam and Joshi 2008, 89).

The existence of these tools also demonstrates that the Harappan people were industrious and skilled, which explains how they were able to plot out and build streets with such precision. The tools were also used to build the many houses and the baths in Kalibangan. The existence of these relatively sophisticated tools also shows that there was a skilled artisan class at Kalibangan.

The absence of other materials also says much about the people of Kalibangan. Most notably, weapons are almost entirely absent from the site, a stark contrast to Bronze Age sites in Mesopotamia and Egypt from the same time period that have

routinely produced various weapons, both ceremonial and practical. Outside of the evidence of human destruction at a number of late Early Harappan sites, there is relatively little evidence of warfare in Harappan society and virtually none from Kalibangan. This may have set the precedent somewhat for art in later periods of Indian civilization, as depictions of warfare were nearly absent, unlike the art of Egypt and Mesopotamia, where the kings were routinely depicted as virile warriors (Kenoyer 1999, 82). The absence of weaponry does not necessarily mean that the Harappans were pacifists, but it does seem to suggest that warfare played a far less important role in their society compared to other ancient cultures.

Written texts were also in short supply in Kalibangan. Many of the examples of writing recovered from the Indus Valley were found on cylindrical terracotta or faience tablets, and the writing on the tablets consisted of short inscriptions yet to be deciphered. The Harappan people also made copper tablets, but none of those have been recovered from Kalibangan and only a couple of the terracotta tablets were excavated in the city (Kenoyer 1999, 74). It is tempting to draw conclusions from the dearth of written texts recovered from Kalibangan, but to do so without more evidence would be problematic. Without knowing more about the Harappan language, it would be guesswork to speculate over why there were so few written texts recovered from Kalibangan. It should be pointed out that although there were very few written texts found at Kalibangan, a number of stamp seals were discovered at the site. Seals depicting unicorns, zebus, and centaurs were all found among the ruins of ancient Kalibangan (Possehl 2002, 76). As mentioned earlier, the mythical creatures on the Kalibangan seals may be related to Harappan religion, but it is difficult to say for sure.

Outside of the Aryans in the middle of the second millennium BCE, none of the many groups gained ascendency over the others on the Indian subcontinent. That situation would not change until the late 4th century BCE, when a Macedonian king managed to lead his army all the way to the banks of the Indus River on his way to conquering much of the known world.

India proved to be more vast than Alexander the Great ever imagined, and far from the end of the world. His army crossed the Punjab, but upon reaching the Hyphasis, or the modern Beas River, his men would march no further. Alexander raged, begged, entreated, and even threatened, but his soldiers had had enough. Further east lay still more powerful Indian kingdoms who, rumor had it, would await them on the eastern bank of the mighty river Ganges with hundreds of thousands of cavalry and infantry, and thousands of war elephants and charioteers besides. Alexander flew into a black rage, refusing all visitors for days, but eventually he relented, realizing that no matter how great their love for him might

be, he could not persuade his veterans to march further south. After erecting a monument on the Hyphasis River to mark the easternmost edge, he at last turned his army westwards for the first time in almost 10 years.

Alexander's Indian campaign is important because of the light that it sheds on the history of a region that was previously obscure, at least to people in Europe. He influenced the cultural history of the Indus Valley by introducing Greek culture, but even though he briefly garrisoned India and brought it under the administrative control of his empire, his successors were unable to retain control of it for very long. Within a few centuries, India would be as distant and mysterious to the Romans as it had been to the Greeks.

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